
```
>sslife <- function(data, tiempos = c(0,2,4,7,11,14,16,18), codiresp =  
c("yes","no"),model="weibull",percent=c(10,25,50))  
{  
  library(survival)  
  totalcases <- dim(data)[1]  
  casesdata <- cbind(1:totalcases, data)  
  casesok <- casesdata[, 1][data[, 2] == codiresp[1]]  
  numindok <- length(casesok)  
  numtimes <- length(tiempos)  
  id <- data[casesok, 1]  
  respcod <- data[casesok, 2:dim(data)[2]]  
  respnum <- matrix(rep(1, numindok * numtimes), ncol = numtimes)  
  respnum[respcod == codiresp[2]] <- 0  
  ti <- rep(tiempos[1], numindok)  
  ts <- rep(tiempos[numtimes], numindok)  
  cens <- rep("interval", numindok)  
  censcod <- rep(3, numindok)  
  for(i in 1:numindok) {  
    if(respnum[i, numtimes] == 1) {  
      ti[i] <- tiempos[numtimes]  
      ts[i] <- tiempos[numtimes]  
      cens[i] <- "right"  
      censcod[i] <- 0  
    }  
    else {  
      inf <- 1  
      while(respnum[i, inf + 1] == 1) inf <- inf + 1  
      sup <- numtimes  
      while(respnum[i, sup - 1] == 0) sup <- sup - 1  
      if(inf == 1) {  
        ti[i] <- tiempos[sup]  
        ts[i] <- tiempos[sup]  
        cens[i] <- "left"  
        censcod[i] <- 2  
      }  
      else {  
        ti[i] <- tiempos[inf]  
        ts[i] <- tiempos[sup]  
      }  
    }  
  }  
  prop<-percent/100  
  pp1<-data.frame(id, ti, ts, cens, censcod)
```

```

pp2<-survreg(Surv(ti,ts,censcod,type="interval")~1,dist=model)
pp4<-predict(pp2,newdata=data.frame(1),type = "uquantile", p = prop, se.fit = T)
ci3 <- cbind(pp4$fit,pp4$fit - 1.96 * pp4$se.fit,pp4$fit + 1.96 * pp4$se.fit)
if (model=="weibull" | model=="lognormal" | model=="loglogistic" | model== "exponential") {
ci3 <- exp(ci3)
pp4$se.fit<-pp4$se.fit*ci3[,1]}
ci2<-cbind(ci3,pp4$se.fit)
mu <- c(pp2$coefficients,pp2$coefficients - 1.96 * sqrt(pp2$var[1,1]),
pp2$coefficients + 1.96 * sqrt(pp2$var[1,1]))
if (model=="exponential") {
sigma<-c(NA,NA,NA)}
else {
si<-exp(pp2$icoef[2])
sigma<-c(si,exp(log(si)-1.96*sqrt(pp2$var[2,2])),exp(log(si)+1.96*
sqrt(pp2$var[2,2])))
}
dimnames(ci2) <- list(percent, c("Estimate", "Lower ci", "Upper ci",
"Serror"))
value<-c("estimate", "lower", "upper")
list(censdata=pp1,musig=data.frame(value,mu,sigma),loglike=-
pp2$loglik[1],slives=ci2)
}
*****

>sslife
*****

##input the data

>library(Rcmdr)
>yog
>resyog <- sslife(yog, tiempos= c(0,2,4,7,9,11,14,16,18),model= "weibull")
>resyog
*****

##survival analysis results of the soy yoghurt drink with kiwi flavour

```

\$censdata

	id	ti	ts	cens	censcod
1	1	14	16	interval	3
2	2	18	18	right	0
3	3	16	18	interval	3
4	4	9	11	interval	3
5	5	9	11	interval	3
6	6	16	18	interval	3
7	7	14	16	interval	3
8	8	14	16	interval	3

```

9 9 14 16 interval 3
10 10 16 18 interval 3
11 11 9 11 interval 3
12 12 9 11 interval 3
13 13 9 11 interval 3
14 14 16 18 interval 3

```

\$musig

```

      value      mu      sigma
1 estimate 2.733076 0.1948278
2 lower 2.622478 0.1218932
3 upper 2.843675 0.3114027

```

\$loglike

```
[1] 25.96663
```

\$slives

```

      Estimate Lower ci Upper ci      Serror
10 9.920885 7.693385 12.79332 1.2870895
25 12.065383 10.123017 14.38044 1.0805209
50 14.320174 12.669122 16.18639 0.8950228

```

```
*****
```

>yog2

>resyog2 <- sslife(yog2, tiempos= c(0,2,4,7,9,11,14,16,18),model= "weibull")

>resyog2

```
*****
```

##survival analysis results of the commercial product

\$censdata

```

      id ti ts      cens censcod
1 1 1 18 18 right 0
2 2 2 4 interval 3
3 3 18 18 right 0
4 4 4 7 interval 3
5 5 14 16 interval 3
6 6 14 16 interval 3
7 7 18 18 right 0
8 8 14 16 interval 3
9 9 18 18 right 0
10 10 14 16 interval 3
11 11 9 11 interval 3
12 12 9 11 interval 3
13 13 9 11 interval 3
14 14 9 11 interval 3

```

```
$musig
      value      mu      sigma
1 estimate 2.781500 0.4458797
2   lower 2.503537 0.2549646
3   upper 3.059463 0.7797504
```

```
$loglike
[1] 28.57929
```

```
$slives
      Estimate  Lower ci Upper ci  Serror
10  5.918642   3.240022 10.81176 1.819460
25  9.262546   6.226375 13.77925 1.877011
50 13.709370  10.315081 18.22059 1.989765
```